

Additional notes on the Japanese species of the genus *Monochroa* (Lepidoptera, Gelechiidae)

Yositaka SAKAMAKI¹⁾ and Hiroyuki KOGI²⁾

¹⁾ Laboratory of Systematic Entomology, Faculty of Agriculture, Hokkaido University,
N9, W9, Sapporo, 060-8589 Japan

²⁾ 2-4, Shinkotoni 7-jo, 15-chome, Kita-ku, Sapporo, 060-0819 Japan

Abstract *Monochroa lucidella* (Stephens) and *Monochroa conspersella* (Herrich-Schäffer) are newly added to the Japanese faunistic list. The male of *Monochroa leptocrossa* (Meyrick) is found for the first time. The former two are redescribed and illustrated in detail and the male of the latter one is described here.

Key words *Monochroa lucidella* (Stephens), *Monochroa conspersella* (Herrich-Schäffer), male of *Monochroa leptocrossa* (Meyrick), Gelechiidae, new record, Japan.

The genus *Monochroa* includes more than 40 species, most of which are recorded from the Holarctic region. Of them 11 Japanese species were recently revised by Sakamaki (1993, 1994, 1996a and 1996b). In Hokkaidô, we found further 2 species, *Monochroa lucidella* (Stephens) and *M. conspersella* (Herrich-Schäffer), both of which are new to the Japanese faunistic list. The male of *Monochroa leptocrossa* (Meyrick), which has not been found so far, is also found for the first time. Some specimens of the species give us the morphological aspect of the male.

In this study, we record *M. lucidella* and *M. conspersella* newly in Japan, redescribe and illustrate their detailed morphology together with that of the male of *M. leptocrossa*.

Monochroa lucidella (Stephens) (Figs 1, 3, 4)

Cleodora lucidella Stephens, 1834, *Illust. Br. Ent.* (Haustellata) **4**: 221.

Doryphora lucidella: Heinemann, 1870, *Schmett. Dtl. Schweiz* (2) **2** (1): 307.

Aristotelia lucidella: Meyrick, 1895, *Handbk Br. Lepid.*: 576.

Xystophora lucidella: Spuler, 1910, *Schmett. Eur.* **2**: 375, tab. 88, fig. 21.

Monochroa lucidella: Pierce & Metcalfe, 1935, *Genitalia tineid Families Lepid. Br. Isls*: 3, pl. 1.

Xystophora scordiscella Rebel, 1904, *Annln naturh. Mus. Wien.* **19**: 352.

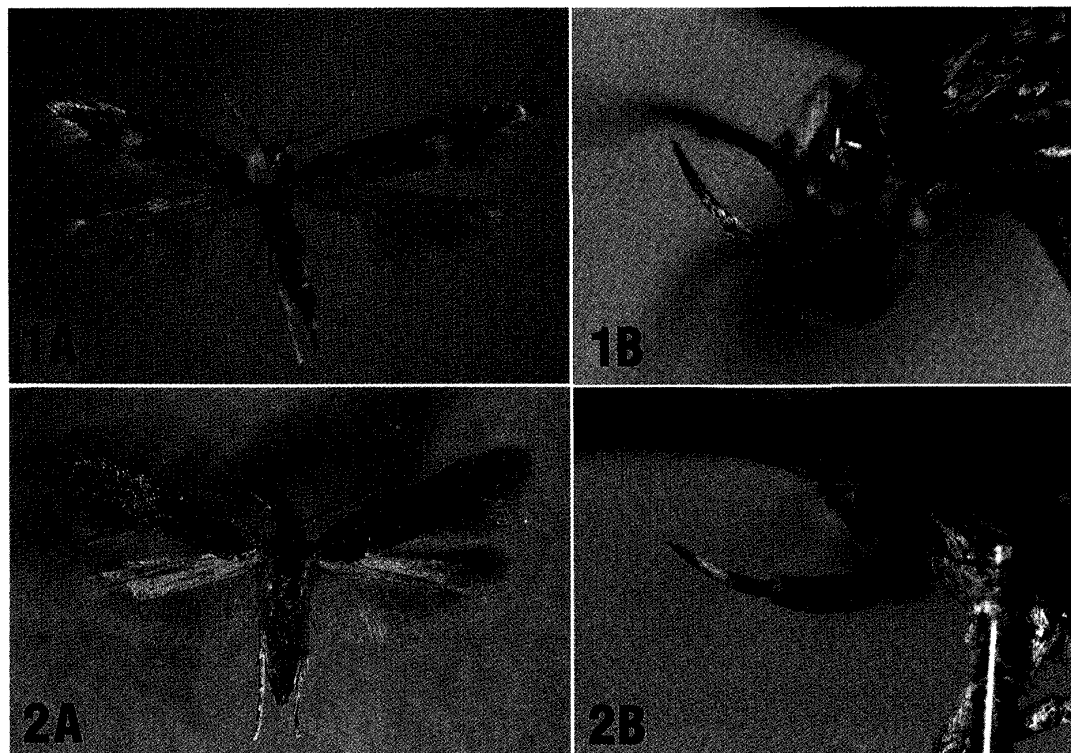
Catabrachmia unipunctella Amsel, 1935, *Mitt. zool. Mus. Berl.* **20**: 297, pl. 10, fig. 63.

The following description is based on the Japanese specimens.

♀. Expanse of wings 13.5–14.3 mm. Length of forewing 6.5–6.9 mm.

Face and head golden-ochre, becoming paler towards ventrum. Labial palpus (Fig. 1B) brown, scattered with ochre scales; basal segment becoming paler; 2nd segment with an ochre band at apex; terminal segment 0.7–0.8 times as long as the 2nd. Antenna filiform, a little shorter than forewing, dark fuscous; scape a little paler. Thorax smooth, golden-ochre. Legs fuscous; apex of each segment of tarsi paler; hind tibia with a paler band at apex, and with paler bristly scales above; calcaria of each tibia fuscous.

Forewing (Fig. 1A) fuscous with a little gloss, with a distinct yellow blotch at apical 1/3 of



Figs 1-2. Dried specimens of *Monochroa* spp. 1. *M. lucidella* (Stephens), ♀, Bakkai, Wakkanai City, 29. vii. 1994, H. Kogi leg. 2. *Monochroa conspersella* (Herrich-Schäffer), ♀, Samani Town, em. 25. vi. 1996, ex *Primula jezoana* var. *pubsence*, Y. Sakamaki leg. (A: wing markings, B: lateral view of face and labial palpus).

costa and larger one on tornus; discal black stigma at apical 1/3, obscure. Some obscure yellow blotches on middle of subcosta, on subbasal 1/3 of cell, and on middle of plica; 3 yellowish ochre minute dots arranged on apical 1/3 of costa, 3 similar dots on termen; cilia pale fuscous. Hindwing greyish fuscous; cilia pale fuscous.

Male genitalia. Male specimens have not been found from Japan so far. Here, we show an illustration of the male genitalia of the Danish specimen for future reference (Fig. 3).

Female genitalia (Fig. 4). Papilla analis weakly sclerotized, moderate in length, covered with minute spines on ventro-caudal margin, and with some plicae on whole surface, sprinkled with short setae and long ones; apophysis posterioris long, moderate in width. Cephalic half of membrane between papilla analis and eighth segment wholly covered with microspines. Eighth abdominal segment sclerotized laterally, with some short setae caudally; tergite sclerotized on caudal 1/2, sternum scarcely sclerotized; apophysis anterioris a little thicker than apophysis posterioris, 2/3 times as long as apophysis posterioris. Ostium bursae poorly sclerotized laterally, ductus bursae moderate in length, wider than twice width of apophysis anterioris, wrinkled on cephalic 1/4; cestum short, forming an incomplete ring; corpus bursae pyriform, membranous, with an oblong signum which has an irregularly bifurcate process at the cephalic margin and a smaller one at the caudal margin.

Specimens examined. JAPAN. Hokkaidô: 2 ♀, Bakkai, Wakkanai City, 29. vii. 1994, H. Kogi leg. (Gen. sl. no. Gel-98001); 1 ♀, Makinouti, Nemuro City, 5. viii. 1994, H. Kogi leg. DENMARK. 1 ♀, Hannenov, 5. vii. 1966, J. Lundqvist leg. (Gen. sl. no. Gel-98007); 2 ♂, Sandvig, 29. vii. 1923, H. Weis leg. (Gen. sl. no. Gel-98008); 1 ♂, Sandvig, 30. vii. 1924, H.

Weis leg.

Distribution. Palaearctic region: Europe to Japan (Hokkaidô).

Host plant. *Eleocharis palustris* Linné, *Scirpus lacustris* Linné (Cyperaceae) in Europe, unknown in Japan.

Remarks. This species, which is new to the Japanese fauna, is easily distinguished from the other Japanese members of *Monochroa* by the glossy fuscous forewing with yellow blotches, and the wholly fuscous antenna without any markings. Superficially, the species looks like *Eulamprotes atrella* ([Denis & Schiffermüller]), but is simply discernible by the larger expanse of wings and the obscure yellow blotches occupying the basal half of the forewing. *M. suffusella* (Douglas) is probably related to the species because of similarity in the male and female genitalia.

Although the Japanese specimens are a little smaller than European, Danish ones (expanse of wings 14.3–16.3 mm, length of forewing 6.8–7.7 mm), we cannot find any distinct qualitative difference between the Japanese and Danish ones.

***Monochroa leptocrossa* (Meyrick) (Fig. 5)**

Aristotelia leptocrossa Meyrick, 1926, *Exot. Microlepid.* **3**: 273; Clarke, 1969, *Cat. Type Specimens Microlepid. Br. Mus. nat. Hist. descr. E. Meyrick* **6**: 293, pl. 145, fig. 3–3b.

Monochroa leptocrossa: Sakamaki, 1996, *Trans. lepid. Soc. Japan* **47**: 254, figs 3-C, D, 8-C, 9-I, 11.

In the superficial characters the male specimens are identical to the female ones. For a detailed description of the female, see Sakamaki (1996b).

Additional description on the male genitalia

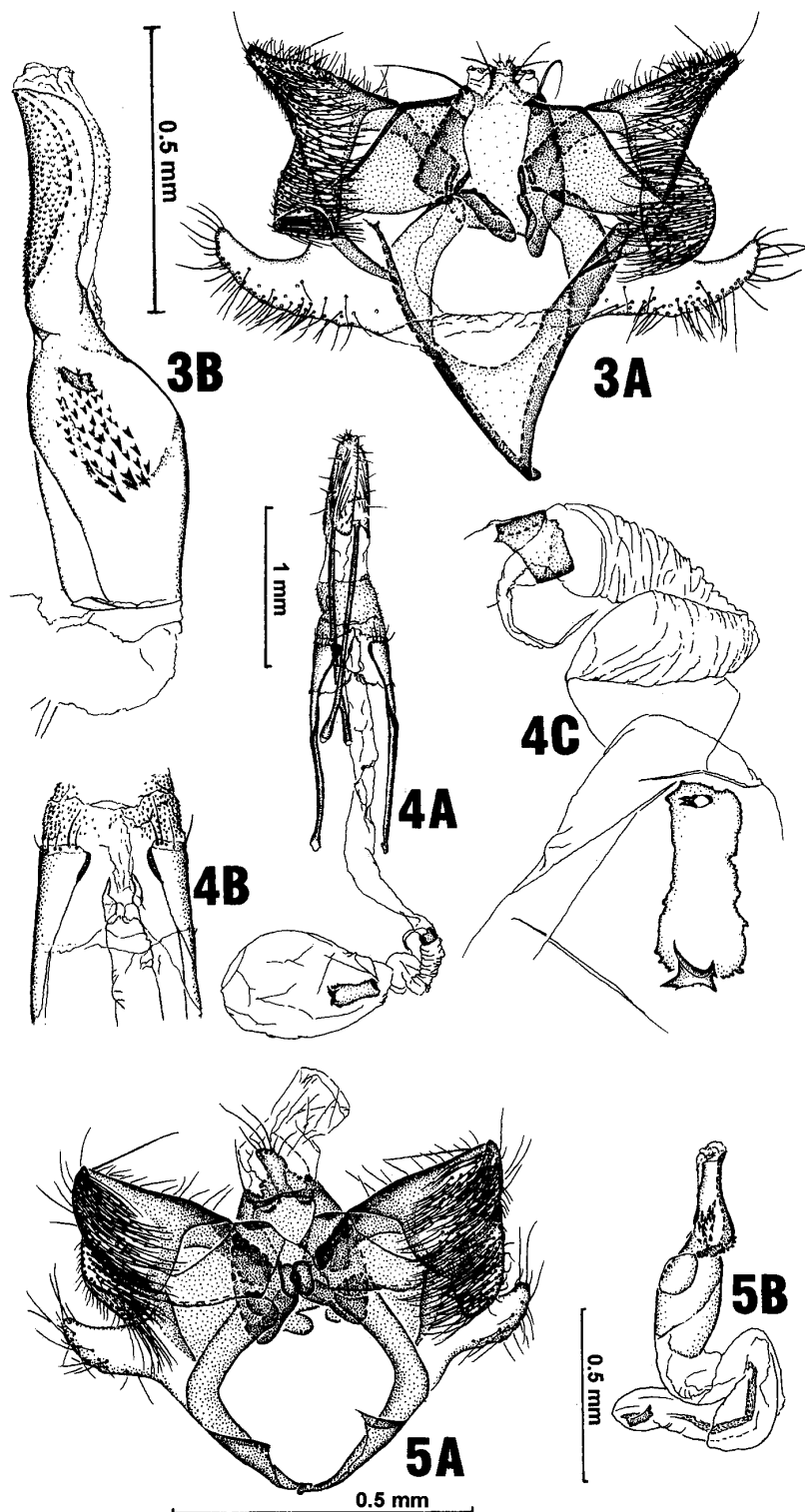
Male genitalia (Fig. 5). Uncus short, weakly sclerotized, somewhat broadened on basal 1/2, with 2 long and 4 short setae apically. Gnathos absent. Valva broad, entirely triangular, not emarginated in apical half, with broad harpe and broad digitate sacculus; apex of valva truncated obliquely; harpe rather broad with numerous long setae; sacculus with some long setae ventrally. Saccus pointed, moderate in size. Aedeagus about twice as long as valva, broad, somewhat sigmoid, with numerous minute processes on a protuberance at apical 2/5; about 15 cornuti short, thick.

Specimens examined. Hokkaidô: 1 ♂, Horonobe Town, 9. vii. 1994, H. Kogi leg. (Gen. sl. no. Gel-98002); 1 ♂, Siriuti Town, 9. vii. 1976, T. Kumata leg. (Gen. sl. no. Gel-95069); 1 ♀, Horokanai Town, 29. vii. 1958, T. Kumata leg.; 1 ♀, Yobetu, Syakotan Town, 7–8. vii. 1994, T. Kumata leg.

Distribution. Russia (Far East) and Japan (Hokkaidô).

Host plant. Unknown.

Remarks. The male of this species is described here for the first time. In the wing markings the species is similar to *M. hornigi* (Staudinger) and *M. japonica* Sakamaki, but is distinguishable from them and the other members of the genus in the following characters: in the male genitalia, valva as wide as long and never emarginate on apical half; in the female, 8th abdominal segment with a pair of distinct crescent hollows ventrally. This species is probably quite closely related to *M. hornigi*.



Figs 3–4. Male and female genitalia of *Monochroa lucidella* (Stephens). 3. Male genitalia (Gen. sl. no. Gel-98008). A: caudal view, valva expanded and aedeagus removed, B: aedeagus. 4. Female genitalia (Gen. sl. no. Gel-98001). A: ventral view, B: 8th abdominal segment around ostium, ventral view, C: cestum and signum.

Fig. 5. Male genitalia of *Monochroa leptocrossa* (Meyrick) (Gen. sl. no. Gel-95069). A: caudal view, valva expanded and aedeagus removed, B: aedeagus.

***Monochroa conspersella* (Herrich-Schäffer) (Figs 2, 6, 7)**

Gelechia conspersella Herrich-Schäffer, 1854, *Schmett. Eur.* 5: 177, tab. 78, fig. 591.

Monochroa conspersella: Piskunov, 1981, *Opred. Faune USSR* 4: 703, fig. 640, 9.

Anacampsis quaestionella Herrich-Schäffer, 1854, *Schmett. Eur.* 5: 193, tab. 77, fig. 587.

Gelechia morosa Mühlig, 1864, *Stettin. ent. Ztg.* 25: 101.

Monochroa morosa: Pierce & Metcalfe, 1935, *Genitalia tineid Families Lepid. Br. Isls.* 3, pl. 2.

For a detailed synonymy, see Gaede (1937) and Sattler (1972).

♂ ♀. Expanse of wings 9.5–11.8 mm. Length of forewing 4.5–6.2 mm.

Face brilliant greyish ochre; head dark grey. Labial palpus (Fig. 2B) black; 2nd segment ochre dorso-apically; terminal segment short, about 5/8 of the 2nd, with an ochre blotch dorso-apically. Antenna filiform, a little shorter than forewing, dark fuscous, with an ochre band apically at an apical segment. Thorax smooth, greyish black, becoming a little paler caudally. Legs greyish black; apex of each segment of tibiae and tarsi ochre; hind tibia with ochre band at middle, and sparsely with short fuscous bristly scales above. Abdomen fuscous dorsally and scattered with a few paler scales ventrally, with an ochre ring on caudal apex.

Forewing (Fig. 2A) mainly blackish fuscous; 1 plical and 2 discal stigmata obscure, deep black, somewhat elongated; 4 obscure white dots between costal 2/3 and apex of wing; cilia greyish fuscous, with basal half darkened. Hindwing pale fuscous; cilia a little darker.

Male genitalia (Fig. 6). Uncus short, weakly sclerotized, with 2 long and 2 short setae apically. Gnathos absent. Saccus pointed, moderate in size. Valva elongated, parallel-sided apically; rather broad harpe projecting ventrally, 3 times wider than width of cucullus, with numerous long setae; sacculus digitate and slender, with some short setae ventrally. Aedeagus about 1.5 times as long as valva, cylindrical in apical half, swollen at basal half, with about 25 minute cornuti.

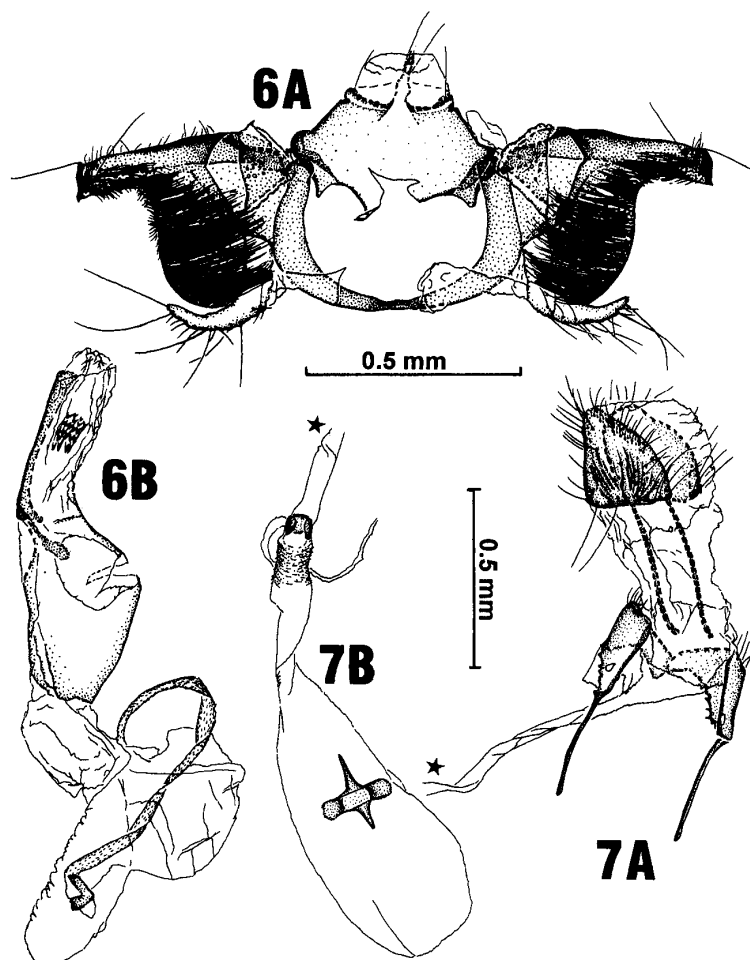
Female genitalia (Fig. 7). Papilla analis weakly sclerotized, short in length, covered with minute spines on ventro-caudal margin, and with some plicae on whole surface; apophysis posterioris long, slender. Eighth abdominal segment strongly sclerotized laterally; tergite sclerotized on caudal 1/2; sternum scarcely sclerotized; apophysis anterioris slender, a little shorter than apophysis posterioris. Ostium bursae membranous, as wide as the length of papilla analis; ductus bursae moderate in length, somewhat broadened and having quite minute spines from its cephalic 1/7 to 2/7; cestum short, forming a rectangular plate; corpus bursae pyriform, membranous; signum forming an elliptic plate with 2 long acute points, one at cephalic margin and the other at caudal margin.

Specimens examined. JAPAN, Hokkaidô: 1 ♂, Samani Town, em. 23.vi.1996, ex *Primula jezoana* var. *pubsence*, Y. Sakamaki leg. (Gen. sl. no. Gel-95037); 2 ♀, ditto, em. 25–27.vi.1996 (Gen. sl. no. Gel-97013); 2 ♂, Siriuti Town, 18.vi.1976, T. Kumata leg. DENMARK, 1 ♂, Ilene, Dania, la., 9.vi.1987, F. P. Falck leg.

Distribution. Palaearctic region from Europe to Japan (Hokkaidô).

Host plants. *Lysimachia vulgaris* Linné and *Primula* spp. (Primulaceae) are recorded in Europe. *Primula jezoana* Miq. subsp. *pubscens* (Takeda) Kitam. in Japan.

Biology. Early larvae mine the leaves of the host plant in spring, about May and form pale ochre blotch mines. The mines start from near the leaf margin, and then extend to the stalk



Figs 6-7. Male and female genitalia of *Monochroa conspersella* (Herrich-Schäffer). 6. Male genitalia (Gen. sl. no. Gel-95037). A: caudal view, valva expanded and aedeagus removed, B: aedeagus. 7. Female genitalia (Gen. sl. no. Gel-97013). A: ventral view, with bursa copulatrix omitted, B: bursa copulatrix.

of the leaf. The larvae pupate about in early June on the ground. Adults emerge in the early summer, in about late June.

Remarks. This species is newly recorded from Japan, and redescribed on the basis of the Japanese specimens here. The wing markings of this species are superficially similar to *M. kumatai* in Japan, but the species is easily distinguished by the dark fuscous antenna with an ochre band at the apical segment, colour patterns of the labial palpus, and of course by the male and female genitalia.

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摘 要

日本産 *Monochroa* 属についての追加記録 (坂巻祥孝・小木広行)

Sakamaki (1996b) において日本産 *Monochroa* 属 11 種がまとめられたが、その後の筆者らの調査でさらに 2 種類が採集された。また、その他にも新たな標本を加えて検討をしたところ、これまで未知であったウスイロフサベリキバガの雄と判断される標本を 2 頭得た。これらの形態・生態的特徴は以下のとおりである。

Monochroa lucidella (Stephens) (Figs 1, 3, 4) キモンキバガ (新称)

本種は外見上、*Eulamprotes* 属のキモンアカガネキバガに似るが、前翅中央部から基部を占める不明瞭な黄色い斑紋があることや開張が一回り大きい (開張 13.5-14.3 mm) ことから一見して、判別可能。同属内に外見が類似した種はなく、特徴的な前翅斑紋および無地褐色の触角等からも容易に識別される。雌雄交尾器の形状からはイグサキバガに近縁と考えられる。日本で幼虫は見つかっていないが、ヨーロッパではカヤツリグサ科のハリイ属 (*Eleocharis*)、ホタルイ属 (*Scirpus*) の茎に潜っていることが知られている。旧北区全体に広く分布し、日本では北海道に分布。

Monochroa leptocrossa (Meyrick) (Fig. 5) ウスイロフサベリキバガ

原記載以来本種は雌しか知られていなかったが、今回、外見上の特徴が本種の雌個体と一致する雄個体を 2 頭得たのでここに雄交尾器の特徴を示した。雄交尾器においては把握器の幅が広く、えぐれがどこにもないことから近縁のホーニヒチャマダラキバガやミゾソバキバガなどと区別可能。

Monochroa conspersella (Herrich-Schäffer) (Figs 2, 6, 7) サクラソウキバガ (新称)

本種は外見上クマタシラホシキバガに似るが、一回り小さく (開張 9.5-11.8 mm)、暗褐色の触角は末端節にのみ黄土色の輪環を持つことで区別できる。春 (5 月) にエゾオオサクラソウに潜葉している幼虫を採集した。ヨーロッパでの食草はサクラソウ科のサクラソウ属、およびクサレダマである。旧北区全体に広く分布し、日本では北海道に分布。

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